THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A substrate adapted for selective micron and nanometer scale deposition, the substrate having;

a support;

a conductive layer on the support;

a dielectric layer of a material which will hold an electrostatic charge; and

a chemically functional layer,

whereby electrostatic charge patterns may be formed in a predetermined manner upon or in the substrate.

2. A substrate as in Claim 1 wherein the support is selected from the group comprising a metal, glass, ceramic, or polymeric material and the support is clear or opaque and flexible or rigid.

3. A substrate as in Claim 1 wherein the conductive layer is combined with the support.

4. A substrate as in Claim 1 wherein the conductive layer is a very thin layer and is transparent.

5. A substrate as in Claim 1 wherein the conductive layer conductive layer is vacuum-deposited onto the support.

6. A substrate as in Claim 1 wherein the conductive layer is selected from the group comprising a sputtered layer of metal or indium tin oxide, or a carbon nano-tube layer.

7. A substrate as in Claim 1 wherein the dielectric layer is selected from the group comprising a glass or a polymeric resin including as methylmethacrylate (MMA).

8. A substrate as in Claim 1 wherein the dielectric layer is a photoconductor.

9. A substrate as in Claim 8 wherein the photoconductor is selected from the group comprising zinc oxide, cadmium sulphide, lead sulphide, lead selenide, amorphous selenium, doped selenium, alloys of selenium including selenium-tellurium, selenium-arsenic, organic photoconductive materials including polyvinylcarbazole (PVK) and complexes of polyvinylcarbazole sensitised with trinitrofluorenone.

10. A substrate as in Claim 1 wherein the chemically functional layer is a material selected from the group comprising a silane polymer, silicon dioxide, silicon nitride (Si_xN_y), titanium dioxide, Tyzor™, cross-linked or partially cross-linked epoxy novolac resins, polymerised oligomers, cross-linked resins, functionalised parylene (a polymer of di-para-xylyene), acrylates and methacrylates which may include functional groups, multi-acrylates and methacrylates, monomers which have been crosslinked with a photoinitiator.

11. A substrate having;

a support;

a conductive layer on the support;

a photoconductive layer of a material which dissipates an electrostatic charge thereon upon receiving incident radiation; and

a chemically functional layer,

whereby electrostatic charge patterns may be formed in a selected array upon the substrate to influence the movement of charged droplets in a medium on the substrate.

12. A substrate adapted for manufacture of DNA arrays, the substrate having;

a support;

a conductive layer on the support;

a photoconductive layer of a material which dissipates an electrostatic charge thereon upon receiving incident radiation; and

a chemically functional layer,

whereby electrostatic charge patterns may be formed in a selected array upon the substrate to influence the movement of charged droplets in a medium on the substrate;

the chemically functional layer comprising at least in part a chemically active material to which a binder molecule can be attached, whereby a selected electric charge pattern may be generated upon the substrate by incident radiation to cause DNA oligomers to selectively join to selected binder molecules or to DNA oligomers already joined to a binder molecule.

13. A substrate adapted for manufacture of DNA arrays, the substrate having;

a support;

a conductive layer on the support;

a photoconductive layer of a material which dissipates an electrostatic charge thereon upon receiving incident radiation; and

a chemically functional layer,

whereby electric charge patterns may be formed in a selected array upon the substrate to influence the movement of charged droplets in a medium on the substrate; the chemically functional layer providing a surface to which a binder molecule can be attached.